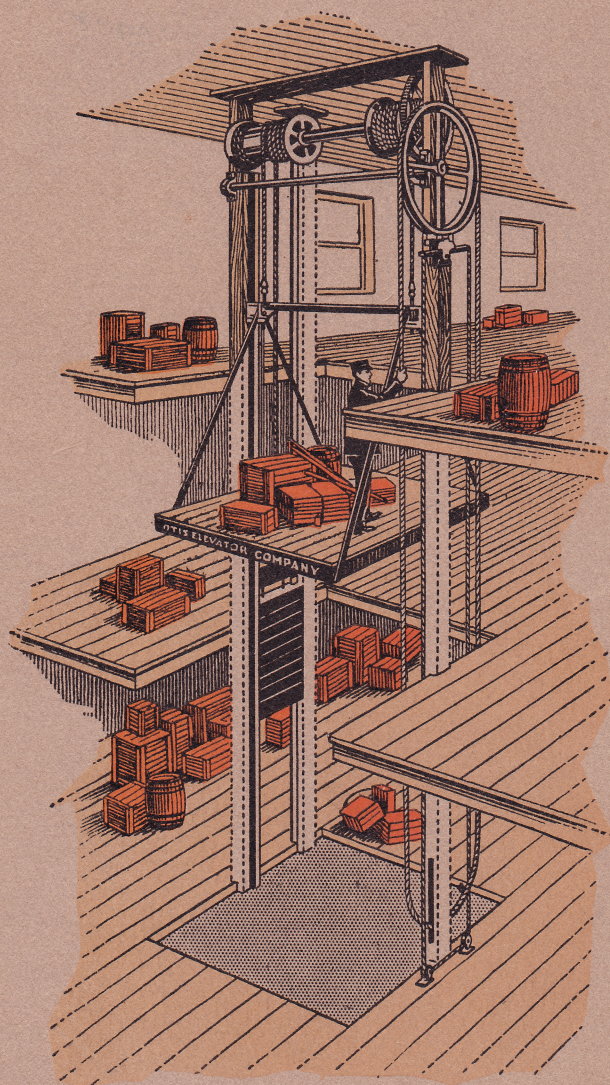


# OTIS



## HAND POWER ELEVATORS



Designed and Printed  
by  
OTIS ELEVATOR COMPANY



4500

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# OTIS HAND POWER ELEVATORS



OTIS ELEVATOR COMPANY

OFFICES IN ALL PRINCIPAL CITIES

OF THE WORLD

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THE simplicity of all *Otis*  
*Hand Power Elevators*  
makes it possible and easy for  
any competent mechanic to  
erect them, with the aid of  
the working drawings and  
instructions furnished with each  
machine.





THE Otis Hand Power Elevator is the result of the efforts of many years on the part of the Otis Elevator Company to produce the highest grade of Hand Power Elevator, at a cost low enough to place these machines within the means of all those whose business demands a hoist of this type.

There are many conditions where elevator service is needed, but where the requirements are such that the installation of a power elevator is not warranted. It is for such purposes that the Otis Elevator Company offers the complete line of these machines which are illustrated and described in the following pages.

Particular attention is called to the steel construction of the car frame and platform, which is the Otis Standard, and is one of the superior features found in the Otis machines.

The size of platform required to meet the purchaser's needs is one of the first questions to be settled in buying an elevator. A study of this question has been made, with a view to standardizing the platform sizes so that they can be manufactured in larger quantities, thus keeping the cost of production down to a minimum, and permitting them to be carried in stock for prompt shipment. Experience has shown that there are certain sizes that are most in demand, and that by using these dimensions as standard practically all needs are satisfied. There will be an increase in price for platforms of special size.



## OTIS NO. 1 CENTER LIFT HAND POWER ELEVATOR

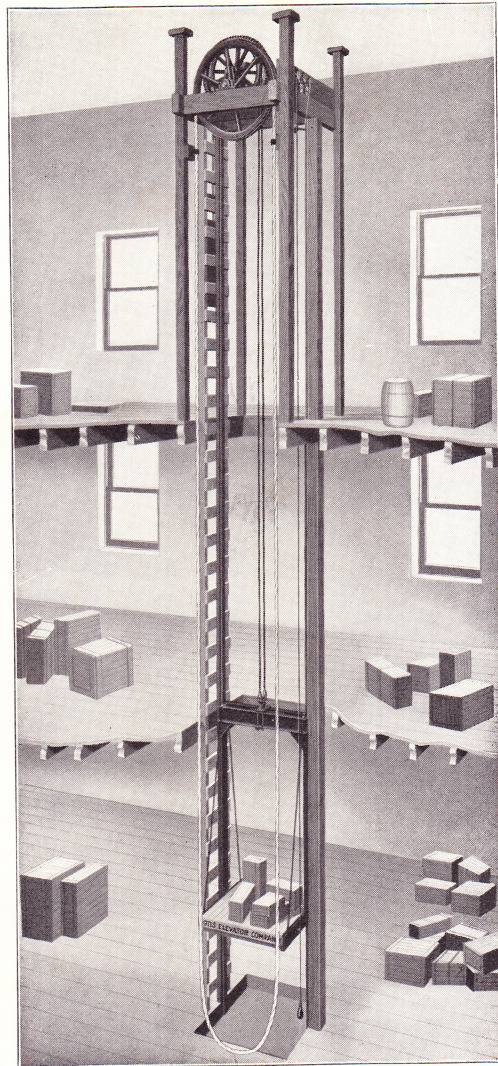
CAPACITIES 500 AND 1000 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Hoisting Sheave  
Shafts and Gearing  
Roller Bearings  
Brake  
Supports for Machine

Adjustable Counterweight  
Steel Frame Platform  
Guide Grip Safety Device  
Hardwood Guide Strips

Two  $\frac{1}{2}$ " Iron Hoisting Ropes  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
3' 0"	x	3' 0"
4' 0"	x	4' 0"
4' 0"	x	5' 0"

These are specially designed for conditions where only light loads and small platform sizes are required. The rope or pull wheel may be placed at either the front or the side, thus making it possible to install this type in an open or an enclosed hatchway.

The side post arrangement shown above is strongly recommended as being the most satisfactory. When conditions are such that the guide posts must be placed in the corners of the hatchway, special construction is necessary in each individual case.

Although this type of elevator is used only for light service, it is provided with the standard form of construction for hand power elevators, consisting of Steel Frame Car with wood flooring, and is provided with an efficient safety device.

The machine is equipped with hoisting sheave with machined grooves. The rope wheel is mounted on a heavy steel shaft, and is provided with a machined flange, to which the brake shoe is applied. The brake is of substantial construction and is provided with a leather lined brake shoe.



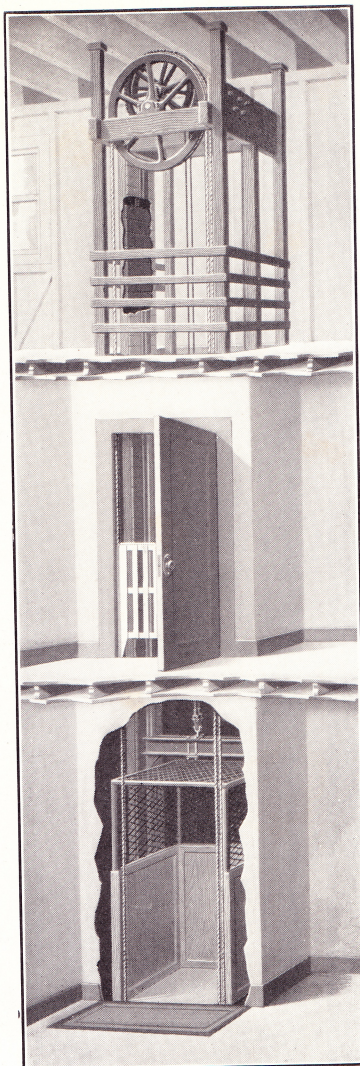
## OTIS INVALID HOIST HAND POWER ELEVATOR

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Hoisting Sheave  
Cut Gear  
Rawhide Pinion  
Roller Bearings  
Leather Lined Steel Band Brake  
Supports for Machine

Adjustable Counterweight  
Steel Frame Platform  
Guide Grip Safety Device  
Hardwood Guide Strips

Two  $\frac{1}{2}$ " Iron Lifting Cables  
One Italian Hemp Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
3' 0"	x	3' 0"
4' 0"	x	4' 0"
4' 0"	x	5' 0"

While the No. 1 Center Lift Hand Power Elevator can be used for residence service, yet it is designed primarily as a freight elevator, and is consequently not equipped with the refinements desirable in elevators used for residential purposes. A hand power elevator has therefore been designed especially for such residence service, and is exceptionally smooth-running, quiet, and easily operated, as well as moderate in price.

This elevator is of the same general construction as the No. 1 Center Lift side post type, except that the large spur wheel is machine cut, and the pinion is made of rawhide, which with the leather lined brake band reduces to a minimum all noise of operation.

The car enclosure is of neat design with the lower portion a hardwood wainscot, and black finished wire grille work for the upper portion and the top. The platform is provided with maple floor.

The hand rope is of fine Italian Hemp.

The counterweight is so adjusted to the weight of the person using the elevator that the minimum exertion is required to move the car in either direction.



## OTIS NO. 4-A HAND POWER ELEVATOR

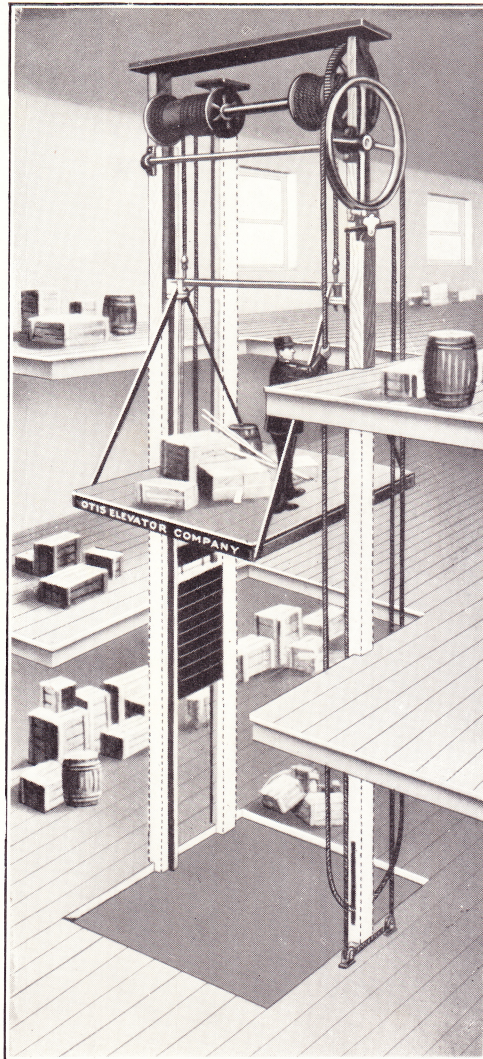
CAPACITIES 1500, 2000 AND 2500 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Iron Drums  
Shafts and Gearing  
Roller Bearings  
Brake  
Supports for Machine

Adjustable Counterweight  
Steel Frame Platform  
Guide Grip Safety Device  
Hardwood Guide Strips

Two  $\frac{1}{2}$ " Iron Hoisting Ropes  
One  $\frac{1}{2}$ " Iron Counterweight Rope  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

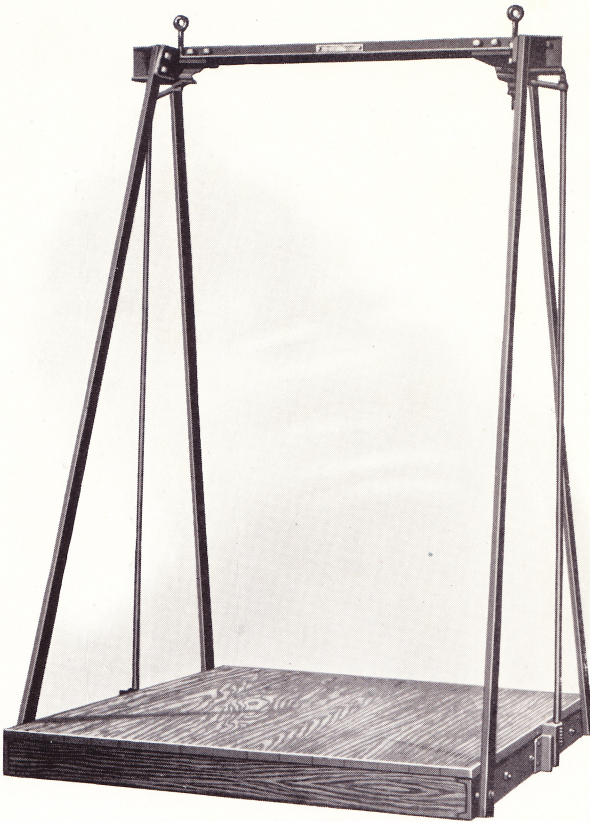
Postwise		Front to Back
4' 0"	x	5' 0"
4' 0"	x	6' 0"
5' 0"	x	6' 0"
5' 0"	x	7' 0"
6' 0"	x	6' 0"
6' 0"	x	8' 0"

This is designed for the handling of general merchandise in buildings where the requirements are not sufficient to warrant the use of power elevators. The machine is easy running, durable, and simple to erect. It is not adapted for an enclosed hatchway, nor corner guides, nor for pull wheel in the front of the hatchway.

The elevator is provided with a steel frame car with wood flooring, and is provided with an efficient safety device. The machine is equipped with cast iron drums with machined grooves. The rope wheel is mounted on a heavy steel shaft and is provided with a machined flange, to which the brake shoe is applied. The brake is of substantial construction and is provided with a leather lined brake shoe. All shafts are mounted on steel anti-friction roller bearings.

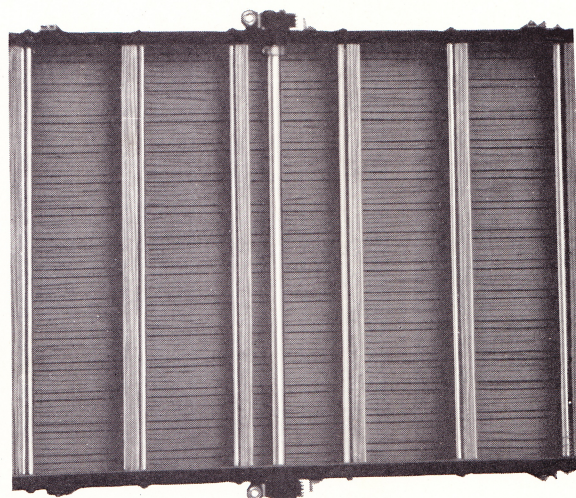


## CAR FRAME AND PLATFORM



4-A Car Frame and Platform

Experience has shown that even on hand power elevators the use of all wood car frames and platforms has not given satisfactory service. Otis Hand Power Elevators are, therefore, furnished with a steel frame car, as illustrated, with no wood in the construction except the flooring. This car frame is also equipped with a safety device similar to that used on some power machines, and which is much more effective than the old style of beam spring safety. The bottom view of the platform as shown, gives a clear idea of the safety dogs, the method of bracing, and the strong construction.



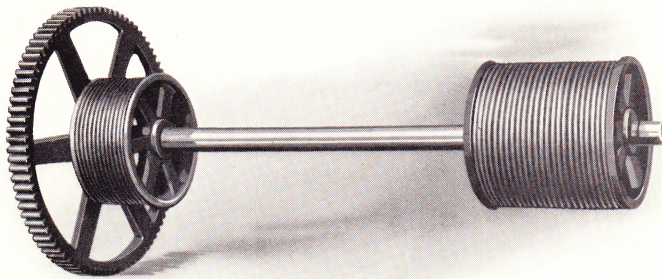
Bottom View of Platform



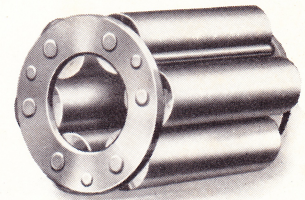
## GEARING AND DRUMS

The machine drums are of cast iron with machine scored grooves, and are a marked improvement over the old style wood, or even the iron drums with cast grooves. Particular attention is called to the illustration of the drums and the gear, showing their strong and substantial construction, and evidences of high class material and workmanship.

Steel anti-friction roller bearings are furnished for all shafts, thus making a smooth and easy running elevator that requires very little effort on the part of the operator.



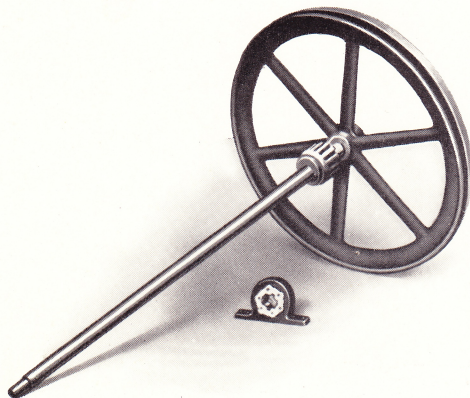
**Gear and Drum**



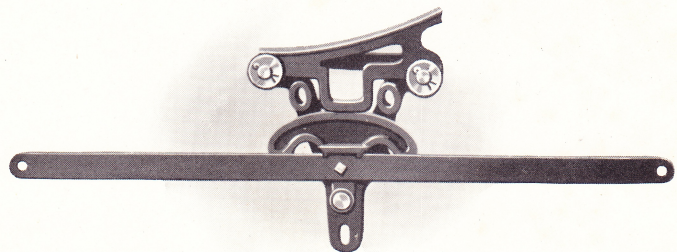
**Roller Bearing**

The rope or pull wheel and pinion are accurately made and mounted on a heavy steel shaft. The flange of the rope wheel on which the brake operates is accurately machined. This insures an easy and positive stop.

The brake is of the utmost importance on every elevator, and great care has been taken to provide the best possible braking appliance on all Otis Hand Power Elevators. The illustration shows the cam or rocker style used with the No. 4-A Machine, which has proved most safe and efficient. The brake is made substantially throughout, and the shoe is lined with leather to insure both gripping efficiency and quietness of operation.



**Rope Wheel**



**4-A Brake**

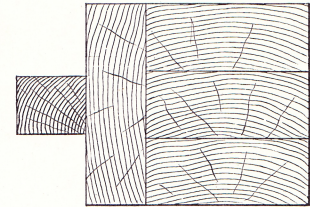


## GUIDE POSTS AND STRIPS

The lumber from which the guide posts are made up can almost always be obtained locally, and the buyer usually prefers to provide these posts, so as to save the freight charges.

A compound post, as shown, is strongly recommended, in order to eliminate the warping, twisting, and checking that usually results from the use of solid posts of this size. The cost of these compound posts is slightly greater than the solid posts, but the expense is justified by the much smoother and easier operation obtained by means of the absolutely true runways for the platform.

The guide strips are furnished with the machine, and are made of well seasoned kiln-dried maple, tongued, grooved, and drilled on a special machine built for this purpose. No difficulty can be experienced in erecting a true plumb line of guides.



Compound Guide Post

## INSTRUCTIONS

A set of Standard Erecting Instructions is provided with each elevator, as shown below. There is also furnished a set of erection drawings giving the best and most economical way in which to erect the machine. With these instructions there should be no difficulty whatever in making a correct installation.

### DIRECTIONS FOR ERECTING SIZE NO. \_\_\_\_\_ HAND POWER ELEVATOR

Before commencing work, be sure that the openings in the different floors are PLUMB, and that dimensions agree with those indicated on erection plan.

#### GUIDE POSTS

After locating center line of opening, front to back, place the counterweight posts (\_\_\_\_\_) in position as erecting plan shows. Attach counterweight guide strips (\_\_\_\_\_). In the case of center lift #1 and #2 make weight box by nailing (\_\_\_\_\_) boards to posts as shown, and then secure main guide posts (\_\_\_\_\_) to this box. After this main guide post (\_\_\_\_\_) is in position on the counterweight side, place the other main guide post (\_\_\_\_\_), and be careful to use gauge board, made to exact measurements, between these posts.

Now attach main guide strips (\_\_\_\_\_) with the exception of about 8', at a place most convenient for putting platform in hatchway.

#### GEARING

The gearing should now be placed in secure overhead frame, in accordance with plan, and care taken to have shafts revolve freely in the roller bearings. (See that gear and pinion mesh properly.) ( $\frac{1}{4}$ " play between tooth and bottom.)

#### PLATFORM

Assemble platform and place in proper position.

#### ROPES

The (\_\_\_\_\_) ropes are to be secured by means of clamps inside drum, allowing at least one complete turn before fastening to platform, at bottom of hatchway, with eye bolts or sockets as furnished. In the case of #1 center lift, main ropes pass over sheave and are secured to platform by sockets.

Place hand rope on hand rope wheel and splice the two ends of the rope together with a running splice of about 10'. (On #4-A machines the post in lower story should be slotted as shown on erecting plan, and before splicing this rope have it, when hanging free, reach about midway of the slot, so that in case of shrinkage the rope will not bind against the post.) Raise platform to upper landing and attach guide strips at bottom.

#### BRAKE

The brake with brake board, which contains five small pulleys, should be securely fastened in place, and the brake tested to see that the band has an even bearing and is properly adjusted to suit the rim of the hand rope wheel. The brake rope should be fastened to the end of the brake lever, run around the small pulleys and down to the lower story, and the brake rope weight, fastened to the end of the brake rope, but always clear of floor. Also see that brake lever is level when brake is applied.

#### COUNTERWEIGHTS

Place counterweights in guides, with a 12" block underneath; attach counterweight rope, lower platform; and remove block under weight. (On #4-A machines bring platform level by adjusting lifting ropes.)

#### SAFETY DEVICE

The trip rods on side of platform should be adjusted by means of adjusting nuts at top of rod. Be positive that safety dogs clear the guide strips.

When finished, have the weight land so that the car cannot run by top landing more than 4", and have car land so that same cannot run by bottom landing more than 4".

#### GENERAL ADJUSTMENTS

Be careful to tighten all bolts and nuts, and before using go carefully over the joints of guide strips, leaving them perfectly smooth. For lubricating the guide strips use a good quality of hard grease, (not containing rosin). Examine brake to see that it clears rim of wheel when released. All parts should operate freely without binding or unnecessary friction.



## OTIS NO. 2 CENTER LIFT HAND POWER ELEVATOR

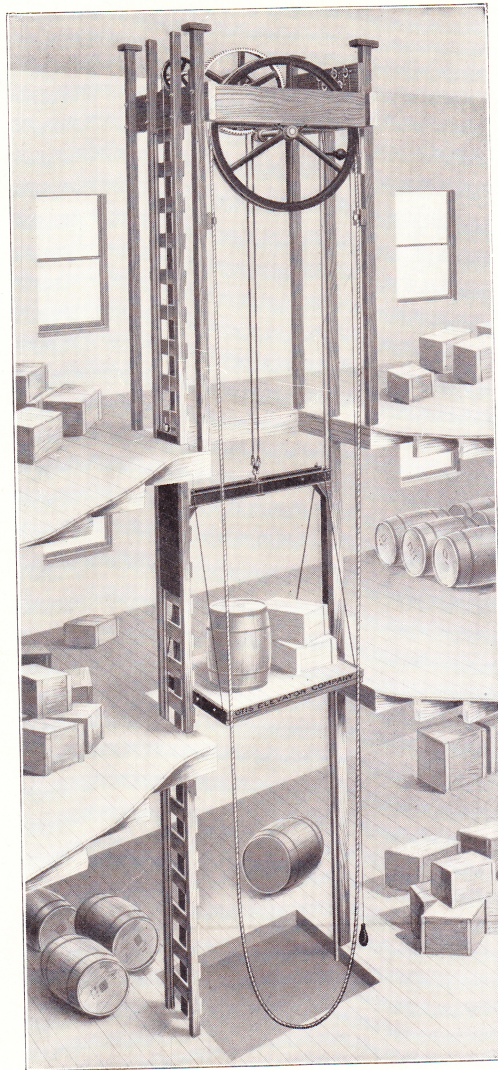
CAPACITIES 1500, 2000, 2500 AND 3000 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Iron Drums  
Shafts and Gearing  
Roller Bearings  
Brake  
Supports for Machine

Adjustable Counterweight  
Steel Frame Platform  
Guide Grip Safety Device  
Hardwood Guide Strips

Two  $\frac{1}{2}$ " Iron Hoisting Ropes  
One  $\frac{1}{2}$ " Iron Counterweight Rope  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
4' 0"	x	5' 0"
4' 0"	x	6' 0"
5' 0"	x	6' 0"
5' 0"	x	7' 0"
6' 0"	x	6' 0"
7' 0"	x	7' 0"

This Hand Power Elevator was designed for heavy loads and hard service, where it was not feasible to install a power elevator. The elevator may be installed in either an open or enclosed hatchway, as the rope or pull wheel may be placed either at the front or at the side.

To meet the severe conditions of service, the elevator is equipped with a strongly braced steel frame car, with wood flooring, and is provided with an efficient safety device, ample counterbalance, and gearing of the highest efficiency. The machine is equipped with cast iron drums with machined grooves. The rope wheel is mounted on a heavy steel shaft, and is provided with a machined flange, to which the brake shoe is applied. The brake is of substantial construction and is provided with a leather lined brake shoe. All shafts are mounted on steel anti-friction roller bearings.

The side post arrangement shown in the drawings is strongly recommended, as placing the posts in the corners of the hatchway involves special construction.

The illustration shows the marked improvement in this type of hand power elevator over the old style installation with all wood construction.



## OTIS NO. 1 CARRIAGE TYPE HAND POWER ELEVATOR

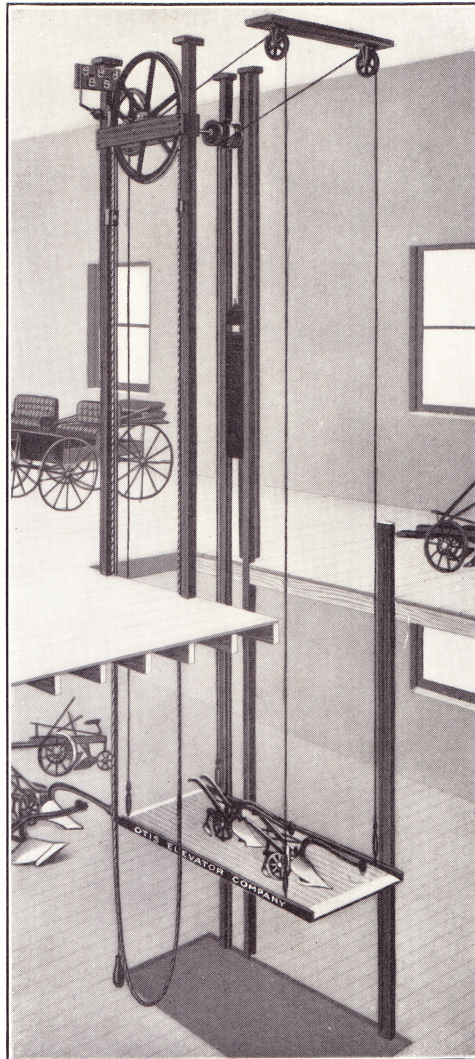
CAPACITIES 1500 AND 2000 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Iron Drums  
Shafts and Gearing  
Roller Bearings  
Brake  
Ceiling Sheaves & Hangers  
Horizontal Supports for Machine

Adjustable Counterweight  
Platform-Channel Side Rails  
Hardwood Guide Strips

Four  $\frac{1}{2}$ " Iron Hoisting Ropes  
One  $\frac{1}{2}$ " Iron Counterweight Rope  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
6' 0"	x	12' 0"
6' 0"	x	14' 0"
7' 0"	x	14' 0"

This elevator has been designed for use in implement houses, livery stables, barns, etc., where the articles to be handled are large in size, but comparatively light in weight.

Particular attention has been paid to providing a most rigid construction for the platform, which has been accomplished by the use of steel channel sides, a great improvement over the old all wood platform.

The machine is equipped with cast iron drums with machined grooves. The rope wheel is mounted on a heavy steel shaft, and is provided with a machined flange, to which the brake shoe is applied. The brake is of substantial construction and is provided with a leather lined brake shoe. Shafts are mounted on steel anti-friction bearings.



## OTIS NO. 2 CARRIAGE TYPE HAND POWER ELEVATOR

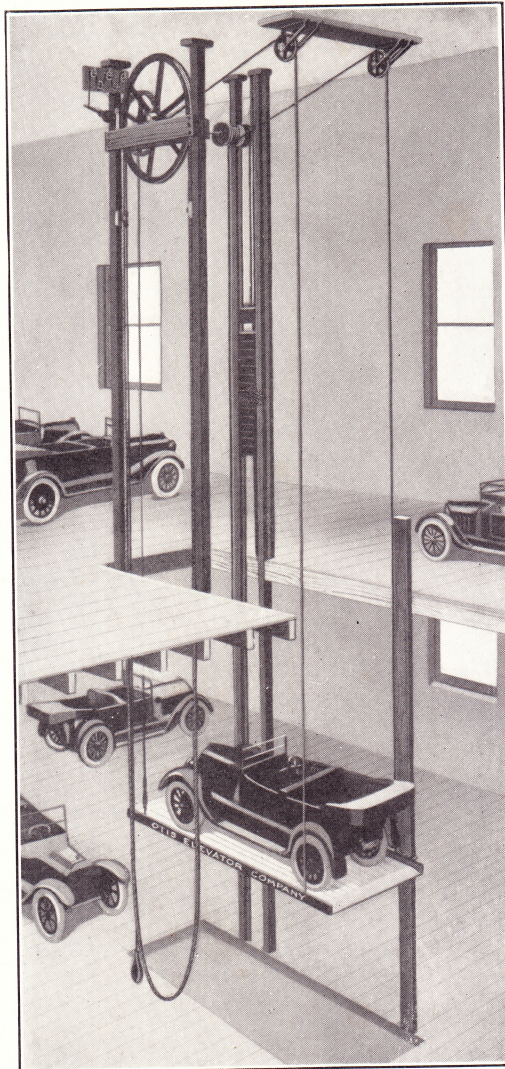
CAPACITIES 2500, 3000 AND 4000 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Iron Drums  
Shafts and Gearing  
Roller Bearings  
Brake  
Ceiling Sheaves & Hangers  
Horizontal Supports for Machine

Adjustable Counterweight  
Platform-Channel Side Rails  
Hardwood Guide Strips

Four  $\frac{9}{16}$ " Iron Hoisting Ropes  
One  $\frac{9}{16}$ " Iron Counterweight Rope  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
6' 0"	x	14' 0"
7' 0"	x	14' 0"
7' 0"	x	16' 0"
8' 0"	x	16' 0"

This type was designed as an intermediate size of the Carriage Type, to meet the ever growing demand for a powerful, easy running hand power elevator to carry automobiles and heavy wagons, where power is not available for elevator operation, or the service requirements do not warrant the installation of a power elevator. The wide range of capacities, exclusive of the weight of the car, make this an ideal machine for general use.

The machine is provided with cast iron drums with machined grooves. The rope wheel is mounted on a heavy steel shaft, and is provided with a machined flange, to which the brake shoe is applied. The brake is of substantial construction, and is provided with a leather lined brake shoe. Shafts are mounted on steel anti-friction bearings.

The platform is provided with steel channel sides, to insure a most rigid construction.



## OTIS NO. 3 CARRIAGE TYPE HAND POWER ELEVATOR

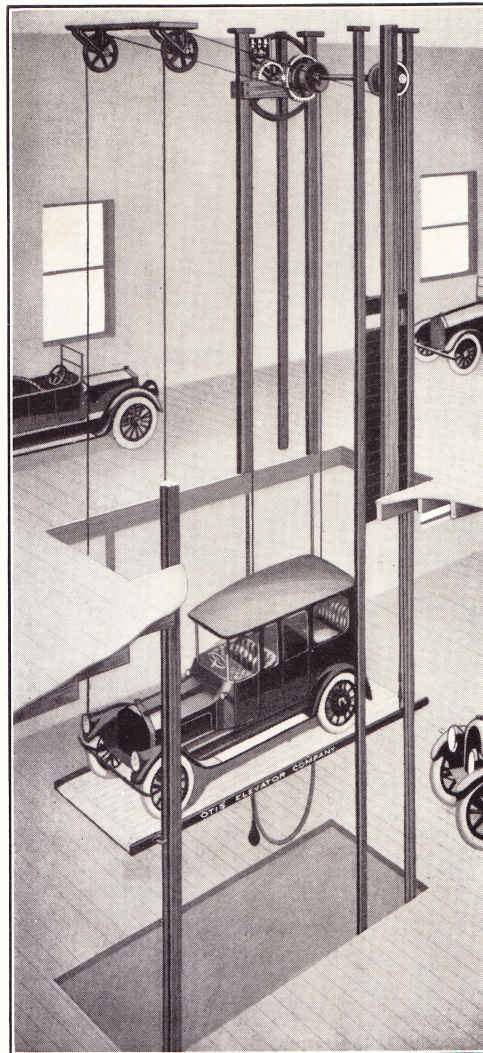
CAPACITIES 5000 AND 6000 LBS.

### SPECIFICATIONS

Hoisting Machine  
Rope or Pull Wheel  
Iron Drums  
Shafts and Gearing  
Roller Bearings  
Brake  
Ceiling Sheaves & Hangers  
Horizontal Supports for Machine

Adjustable Counterweight  
Platform-Channel Side Rails  
Hardwood Guide Strips

Four  $\frac{5}{8}$ " Iron Hoisting Ropes  
One  $\frac{5}{8}$ " Iron Counterweight Rope  
One  $1\frac{1}{8}$ " Manila Hand Rope  
One  $\frac{1}{2}$ " Brake Rope



### STANDARD PLATFORM SIZES

Postwise		Front to Back
8' 0"	x	16' 0"
8' 0"	x	18' 0"
8' 0"	x	20' 0"
9' 0"	x	18' 0"

The problem of handling heavy loads, such as are carried on this type of elevator, is usually beyond the possibilities of a hand power elevator, because the effort required of the operator is too great.

The Otis Elevator Company has, however, adopted a *Double Reduction Gear*, the use of which, combined with careful and high class workmanship, makes possible the use of this type of elevator for garage service where power is not available for elevator operation, or service requirements do not warrant the installation of a power elevator.

The machine is of strong and sturdy construction, and is provided with heavy cast iron drums with machined grooves. The rope wheel is mounted on a heavy steel shaft and is provided with a machined flange, to which the brake shoe is applied. The brake is strongly and substantially constructed and is provided with a leather lined brake shoe. Shafts are mounted on steel anti-friction bearings.

The platform is of strong and rigid construction, and is provided with steel channel sides.



## OTIS NO. 1 BASEMENT HAND POWER ELEVATOR

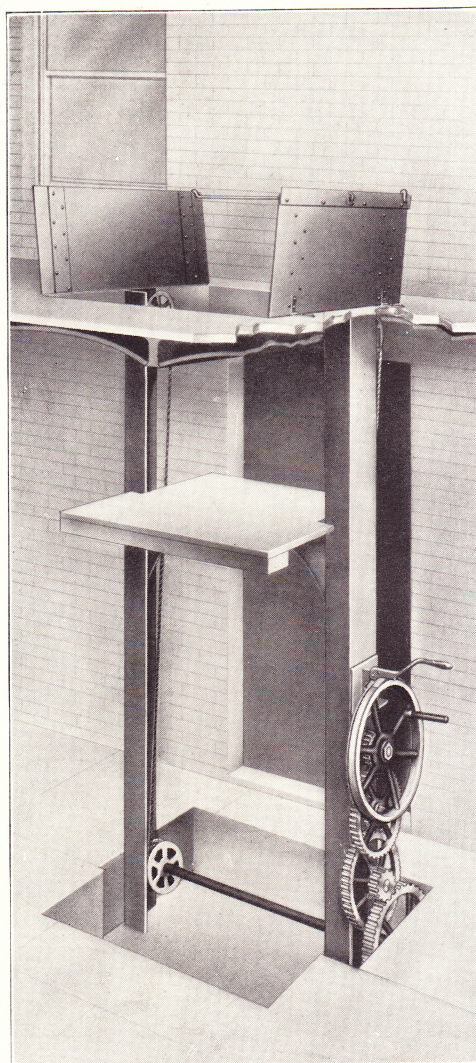
CAPACITIES 500 TO 2500 LBS.

### SPECIFICATIONS

Hoisting Machine  
Hand Wheel  
Iron Drums  
Spur Gearing  
Steel Shaft  
Bearings  
Brake

Overhead Sheaves  
Platform  
Steel Angle Guide Posts

Two  $\frac{1}{2}$ " Iron Hoisting Ropes



### STANDARD PLATFORM SIZES

Postwise		Front to Back
3' 0"	x	4' 0"
4' 0"	x	4' 0"
5' 0"	x	4' 0"
6' 0"	x	4' 0"
7' 0"	x	5' 0"

Designed to be compact and simple in construction, this machine requires less space than any other of its kind. The machine is easy running, and is built to withstand the exposed conditions in which it is usually installed.

The construction of the elevator is much simplified by the method of attaching the iron hoisting ropes to each side of the platform. The drums and gearing are all mounted on the side angles, thereby making the entire equipment (except the top and bottom fastenings) self-contained or self-supported. These features result in a very considerable saving in the cost of erection.

This type cannot be installed in an enclosed hatchway, nor with the gears close to a wall or partition. The No. 2 Basement Type is designed to meet those conditions.



## OTIS NO. 2 BASEMENT HAND POWER ELEVATOR

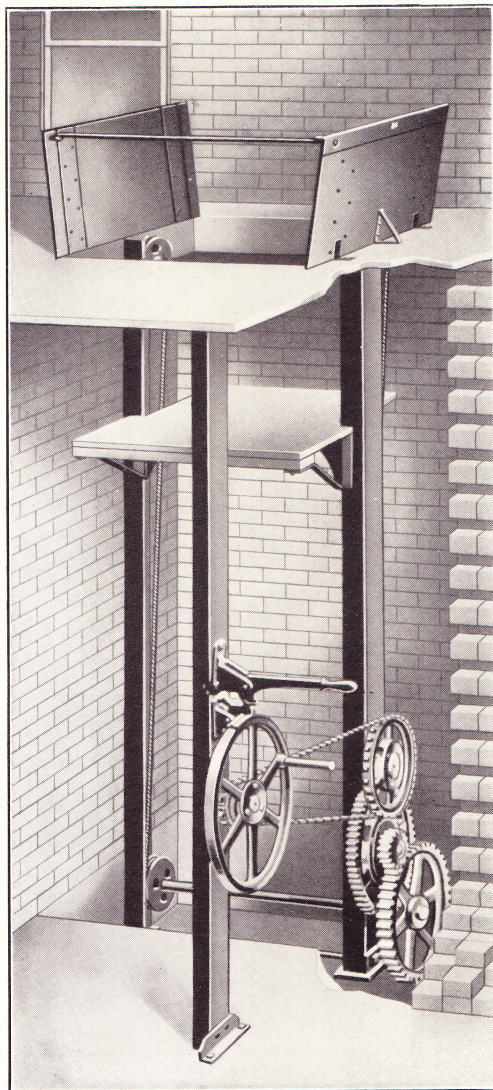
CAPACITIES 500 TO 2500 LBS.

### SPECIFICATIONS

Hoisting Machine  
Hand Wheel  
Chain and Sprocket  
Iron Drums  
Spur Gearing  
Steel Shaft  
Bearings  
Brake

Overhead Sheaves  
Platform  
Steel Angle Guide Posts

Two  $\frac{1}{2}$ " Iron Hoisting Ropes



### STANDARD PLATFORM SIZES

Postwise		Front to Back
3' 0"	x	4' 0"
4' 0"	x	4' 0"
5' 0"	x	4' 0"
6' 0"	x	4' 0"
7' 0"	x	5' 0"

This type is of the same general design as the No. 1 Basement Type, differing only from that type in the position of the hand wheel, which is set away from the main gearing and is connected to it by a chain and sprockets.

This arrangement is designed to meet the conditions under which such an elevator must be installed in an enclosed hatchway, or where the gearing is too close to the wall to permit of operating the hand wheel as it is arranged on the No. 1 Basement Type.



# LIST OF OTIS OFFICES

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